CIRCONTROL
Mobility & eMobility

Post eVolve Smart Series

Instruction Manual

Post eVolve Smart Series
Instruction Manual

Here's your guide to use and configure eVolve.

1

This manual provides information about the usability and configuration of the Post eVolve Smart, which has been designed and tested to allow electric vehicle charging, specified in IEC 61851.

It contains all the necessary information for safe use and help to get the best performance from it with step-by-step configuration instructions.

THE FOLLOWING SYMBOLS ARE USED FOR IMPORTANT SAFETY INFORMATION IN THIS DOCUMENT

ATTENTION!
Indicates that the damage to property can occur if appropiate precautions are not taken.

- Complies with IEC 61851, Electric vehicle conductive charging system (IES 61851-1 and IEC 61851-22)
- Complies with IEC 62196, Plugs, socket-outlets, vehicle couplers and vehicle inlets (IEC 62196-1 and IEC 62196-2).
- Standards: 2014/35/UE, LVD;2014/30/UE, EMC.
- RFID complies with ISO 14443A/B

So, hello!

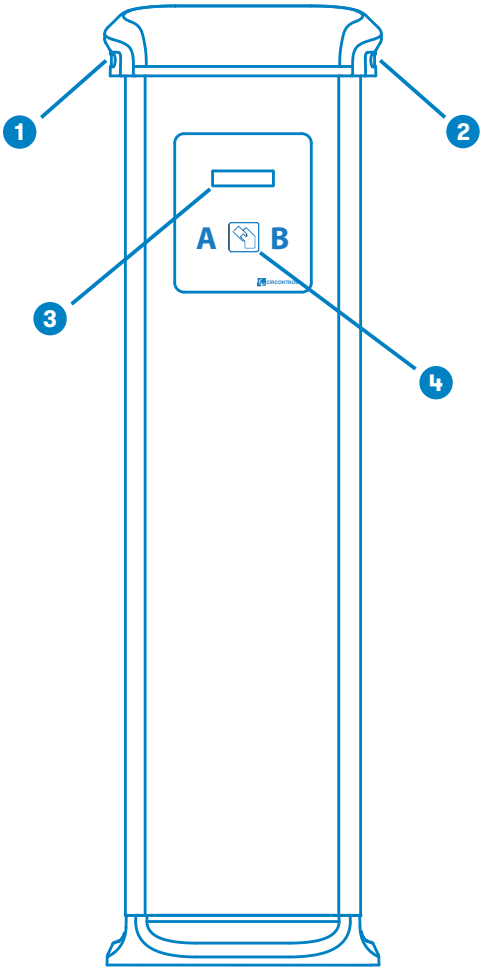
IMPORTANT SAFETY INFORMATION

Read carefully all the instructions before manipulating the unit.

The Charge Point may not include elements of electrical protection.

- Read all the instructions before using and configurating this product.
- Do not use this unit for anything other than electric vehicle charging.
- Do not modify this unit. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with electrical safety regulations according to your country.
- Do not make repairs or manipulations with the unit energised.
- Only trained and qualified personnel should have access to electrical parts inside the device.
- Check the installation annually by a qualified technician.
- Remove from service any item that has a fault that could be dangerous for users (broken plugs, caps that don't close...).
- Use only Circontrol supplied spare parts.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.

2



1 - Plug A LED Beacon	2 - Plug B LED Beacon
3 - Display	4 - Proximity Card Reader

Features

MAIN FEATURES OF THE UNIT

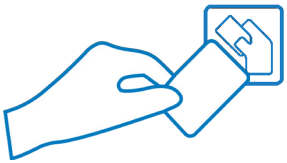
Charge Point may not include elements of electrical protection.

- **Display:** Information about the status of the connectors and detailed data as kWh and duration time.
- **Connector Lock:** Type 2 connector has a lock system to avoid disconnection of EV meanwhile is charging.
- **Light beacon:** Three colour led indicates the status of the connectors.
- **RFID:** User authentication.
- **Ethernet:** TCP/IP communication for remote supervision and configuration.
- **3G Modem (optional):** For those places where wired communications are not sufficient.
- **Energy metering:** Integrated meter built is measuring power and energy consumed by the EV during a charge transaction.
- **Remote access:** For supervision and control from everywhere.
- **Charge transaction historics:** Charge Point is capable of storing information about the charge transactions.
- **OCPP:** Open standard communication protocol, allows communication between the Charge Point and the Central System.

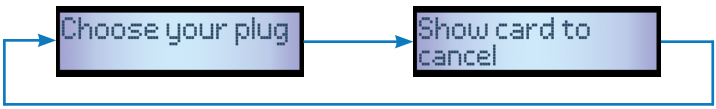
3

B Start Charging

1. The first step is to **show the proximity card** to the reader*



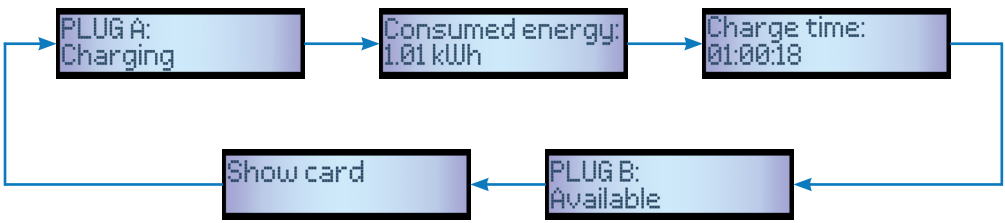
Once done, the Led Beacon turns **Blue** and the Display shows the following sequence of messages:



*If the proximity card reader is disabled, charge transaction starts automatically when a vehicle is detected.

2. Plug the **cable to the vehicle**, choose one available socket (in case there are more than one) and plug the **cable to the Charge Point**.

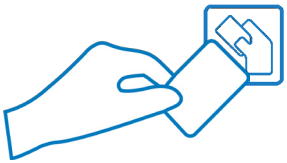
Once done, the Display shows the following sequence of messages:



How to use it?

Stop Charging

1. The first step is to **show the proximity card** to the reader*



Once done, the Led Beacon turns **Green** and the Display shows the summary of the charge transaction:

*If the proximity card reader is disabled, charge transaction stops automatically when a cable is disconnected from the vehicle.

2. **Unplug** the cable from both sides.

Once done, the connector becomes available and the Display shows the following sequence of messages:

4

A Introduction

The Charge Point can be configured and monitorized to establish preferences or specific setup using integrated Ethernet communication port allocated in the main controller device.

B What's needed

Before proceeding with the configuration, make sure all the following is ready:

Computer running Microsoft Windows, at least Windows XP .

UTP Cable (Crossover recommended)

IPSetup.exe (Software provided by Circontrol)

How to configure it?

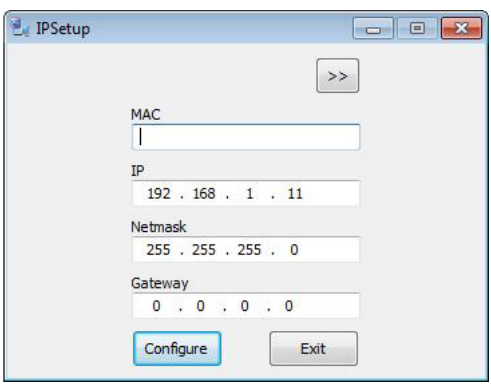
Connection

Charge Point is delivered with default network setting of “DHCP enabled”. It means that the charge station will try to obtain an IP address from a DHCP server available on the network.

Connecting a PC directly with the Charge Point needs to be done with static IP address. The PC and the Charge Point must be in the same network and in the same range.

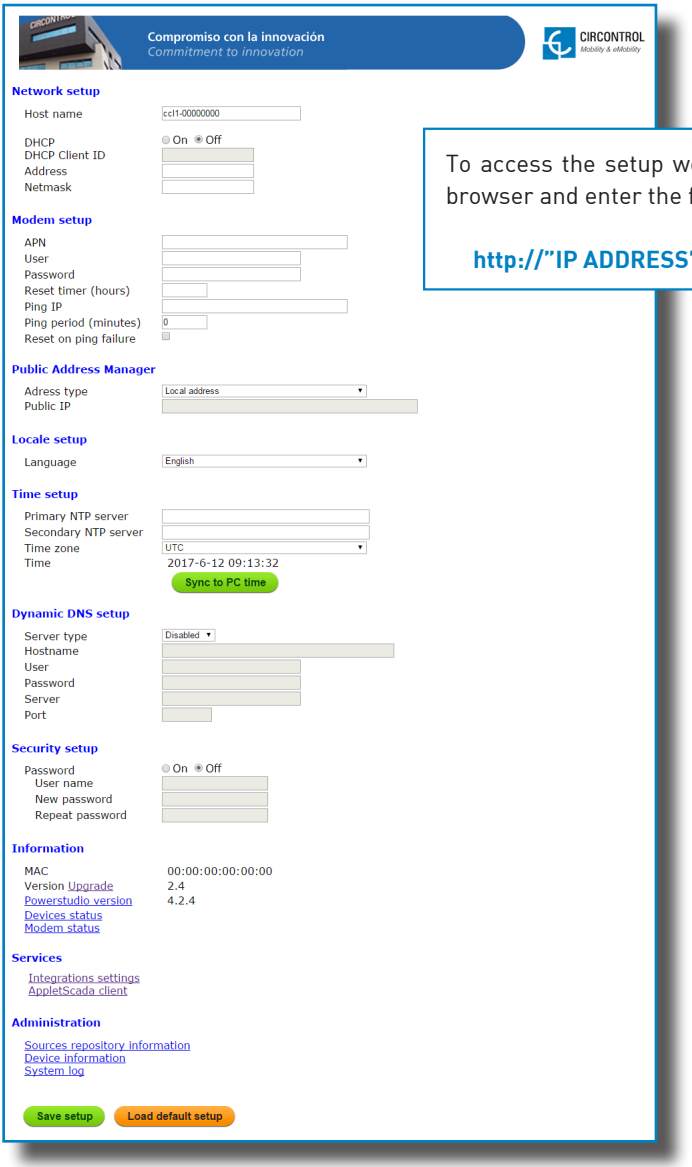
In order to change the IP of the Charge Point, use “IP Setup”.

- Enter the MAC of the device
- Enter the desired IP Address
- Click on “Configure”



D Setup web page

Setup web page allows managing networking setup, modem 3G setup, upgrading the device and other options.

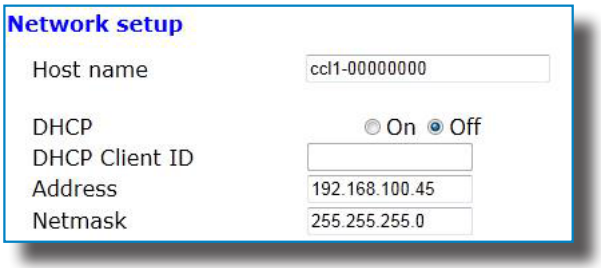


To access the setup web page, open a web browser and enter the following address:

http://"IP ADDRESS"/html/setup.html

E Network setup

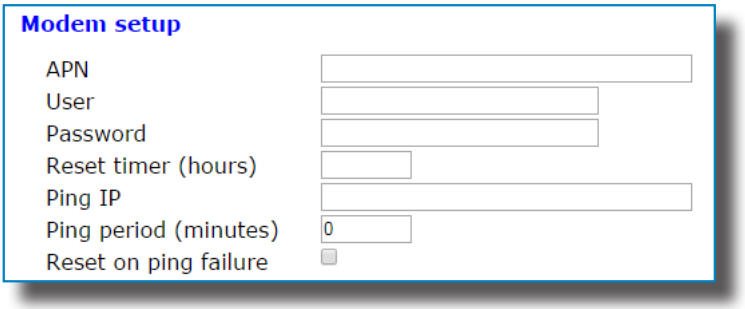
This section provides basic configuration of the network parameters.



Value	Description
Host name	Name of the device on the network
DHCP	Enable or disable the IP address assignment by a DHCP server
DHCP Client ID	Client ID associated to the DHCP Server (If available)
Address	IP address assigned to the charge point
Netmask	Netmask of the network

F Modem setup (only 3G models)

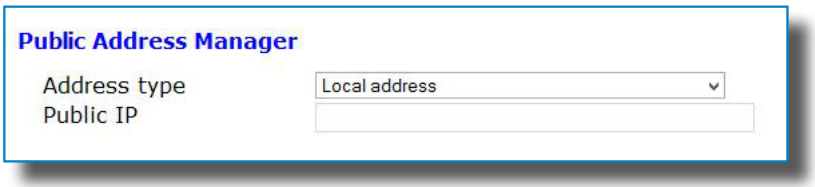
For enabling 3G integrated modem check this section, to set the parameters provided by the SIM Card network operator.



Value	Description
APN	Access point name Consult SIM Card network operator
User	Credentials assigned to the APN *If credentials are not needed, insert "1234" on both fields
Password	
Reset timer (hours)	Timer to reset the modem and communications
Ping IP	IP address where the Charge Point pings
Ping period (minutes)	Period between pings
Reset on ping failure	• Checked: enabled • Unchecked: disabled

Public address manager

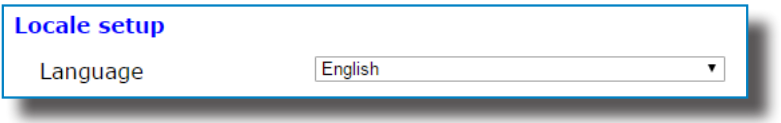
This section is for integrations and allows setting the IP address to establish connection between the Charge Point and the Central System.



Value	Description
Address type	• Local address: select this option if the OCPP central system is connected to the same private network than the charge point is already connected. • Static address: select this option if the external modem/router has static public IP address. Note: Public IP address or domain name must be entered manually in the "Public IP" text box. • SIERRA Wireless Raven XE H2295EW: Select this option only when SIERRA Wireless RAVEN XE cellular router is connected to the charge point. • SIERRA Wireless AirLink LS300: Select this option only when SIERRA Wireless AirLink LS300 cellular router is connected to the charge point. • Embedded modem: Select this option when using 3G integrated modem.

H Locale setup

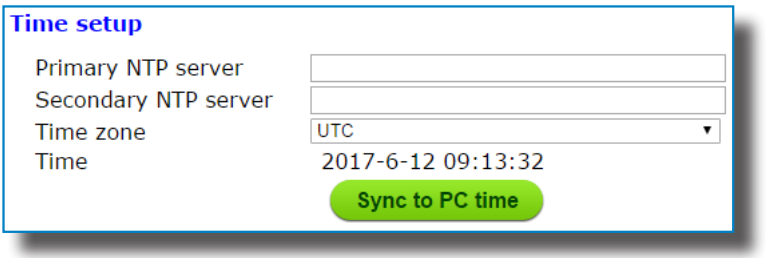
This section allows changing the language of the Display.



Value	Description
Language	Selecting desired language to show

I Time setup

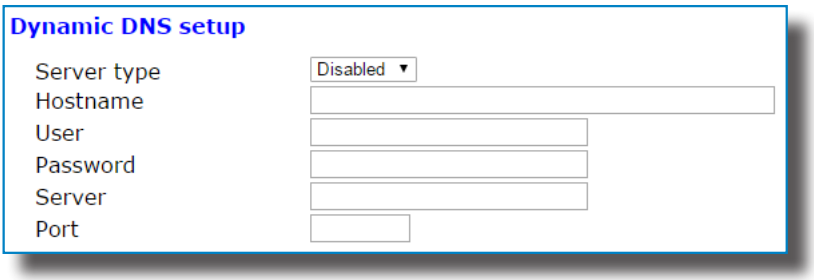
This section allows setting the time and region unit time.



Value	Description
Primary NTP Server	Synchronize the time through internet automatically
Secondary NTP Server	
Time zone	Select the regional unit time according to the location
Time	Current date and time of the unit

J Dynamic DNS setup

Dynamic DNS is a system that updates in real-time the public IP address assigned to a domain name server.

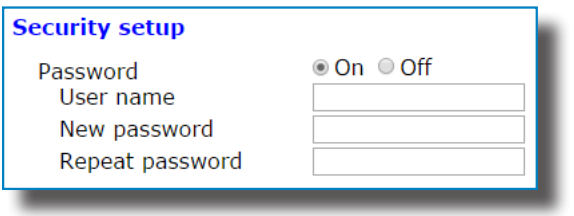


Value	Description
Server type	Select the type of Dynamic DNS Server
Hostname	Parameters provided by dynamic DNS server
User	
Password	
Server	
Port	

Security setup

Prevent unauthorised access to the setup web page.

All of the parameters are disabled by default factory settings.



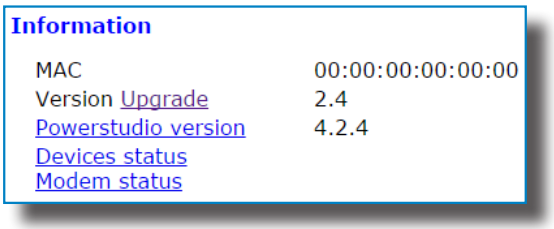
Value	Description
Password	• **ON**: authentication enabled • **OFF**: authentication disabled
Username	Username and password authentication for setup.html web page
New password	
Repeat password	

Do not forget the credentials. There is no way to reset the device to default factory settings.

It will require returning the unit to the service centre.

System information

This section provides basic information about the unit.



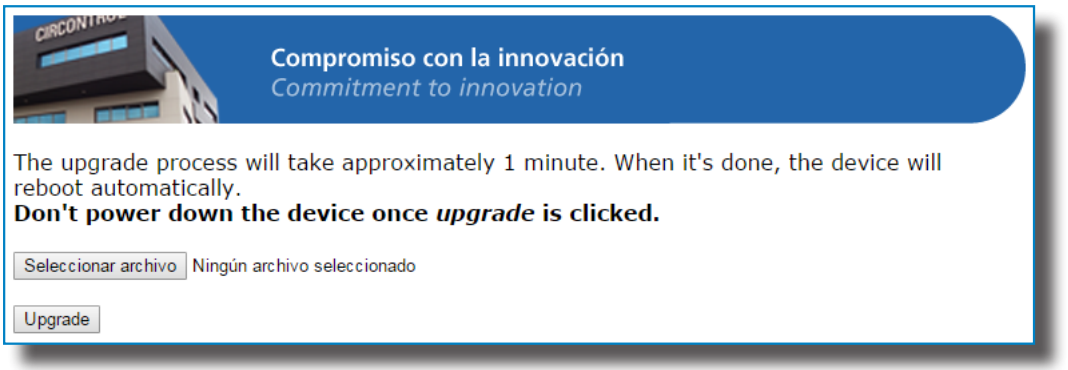
Value	Description
MAC	Identifier of the network card of the unit
Version Upgrade	Version of the firmware currently installed and link to the upgrade web page
Powerstudio version	Engine version of PowerStudio
Devices status	Link that allows viewing the status of the configured devices

System upgrade

Upgrade web page allows to upgrade the firmware of the Charge Point remotely.

This file is provided by the service centre.

Direct link: **http://"IP ADDRESS"/html/upgrade.html**



Firmware file transfer must not be interrupted. Failure of the file transfer involves irreversible damage the main controller of the Charge Point.

It will require returning the unit to the service centre.

Ensure that the unit is not affected or powered off while updating.

N Logs

Log web page is a log that is created since charge point is powered ON. If charge point is restarted this log is erased and immediately is created a new one.

Direct link: **http://"IP ADDRESS"/services/chargePointsInterface/log.html**

5

A Parameters

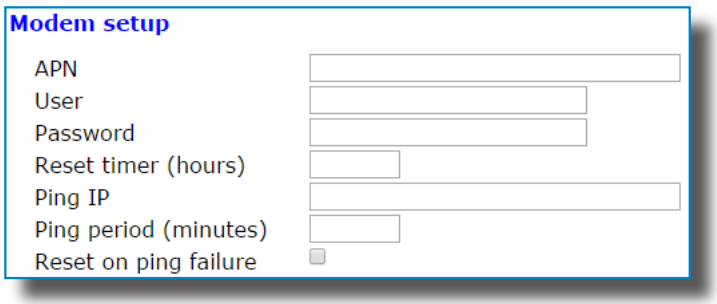
Access “Modem setup” section of the “Setup web page” (refer to Section 4 for more information).

Once SIM card is inserted on the embedded 3G modem, enter the following parameters:

- APN (Access Point Name)

- User

- Password



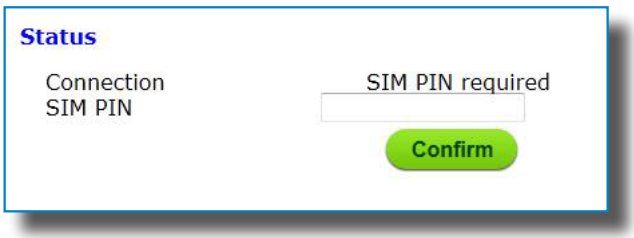
*These parameters are provided by the network operator of the SIM card inserted.

3G Communications

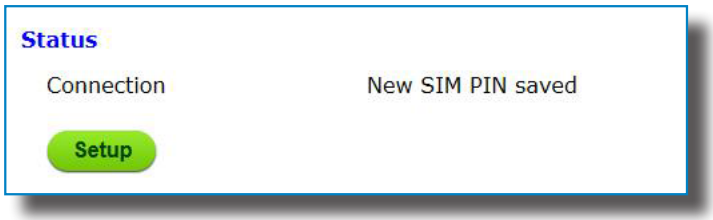
B SIM PIN

Go to following address: **http://"IP ADDRESS"/html/modem-status.html**

The first time that SIM card is inserted, the Charge Point asks to enter its PIN number.



After entering PIN number and clicking on Confirm button, it shows the following confirmation message:

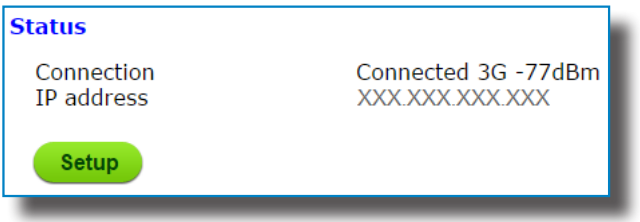


*PIN number will not be required anymore after entering for the first time and the device will start 3G communications automatically.

Connection Status

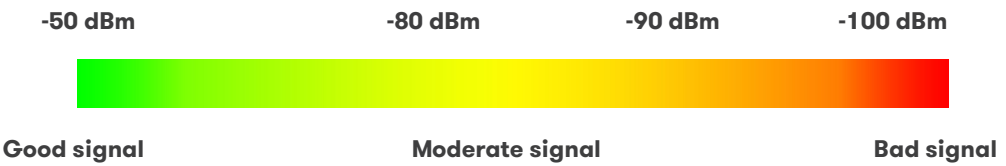
When the 3G connection is successful, following message appears on the web page of modem status.

Direct link: **http://"IP ADDRESS"/html/modem-status.html**



Value	Description
Connection	• 3G communications status • Data access protocol used • Signal and coverage
IP Address	Public IP assigned by the SIM card network operator

Following diagram shows an approximated range of signal strength that can be obtained depending on the location of the Charge Point:



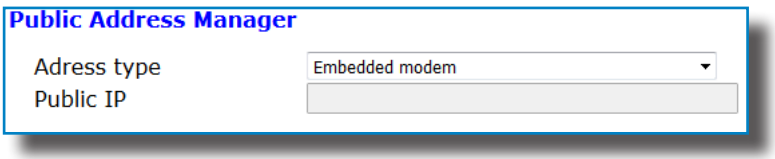
6

A Before starting

Following items must be taken into account before proceeding in order to ensure proper performance:

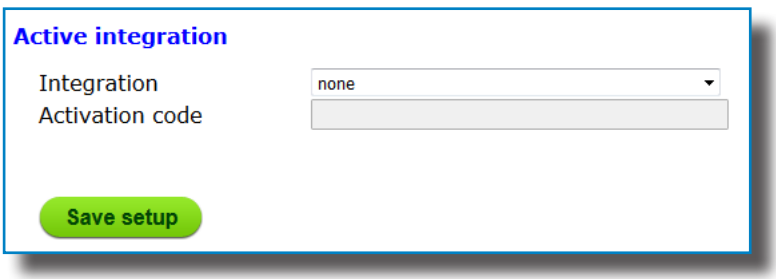
- If 3G modem is enabled, select Embedded Modem within Public Address Manager section:

Direct link: **http://"IP ADDRESS"/html/setup.html**



- Select desired integration version according to your charge point operator:

Direct link: **http://"IP ADDRESS":65432**



Integrations

B Setting up

Once the desired integration is activated on the charge point, it starts as configuration mode and all fields are empty. The data is always saved even when the Charge Point is powered off.

In order to setting up the integration open a web browser and enter the following link:

http://"IP ADDRESS":8080

Use following credentials to access:

User	admin
Password	1234

7

A Management system (CS)

Allows the Charge Point to know where the central system is hosted to notify all the requests.

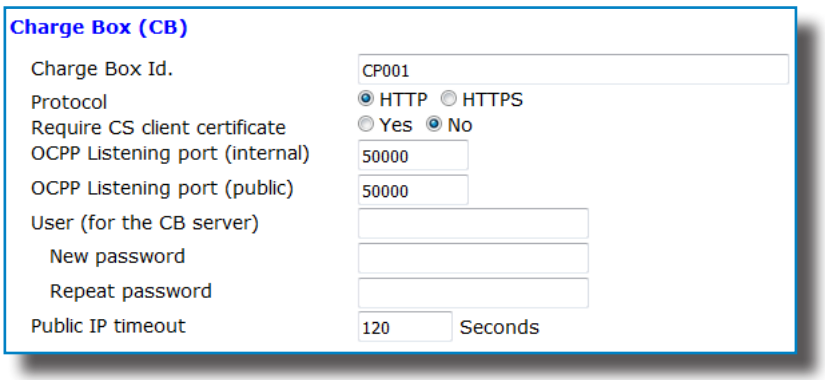
Following fields are mandatory to complete:

Value	Description
Host URL	URL address of the central system
User	Authentication for central system.
Password	*Leave in blank if not needed

OCPP 1.5

B Charge Box (CB)

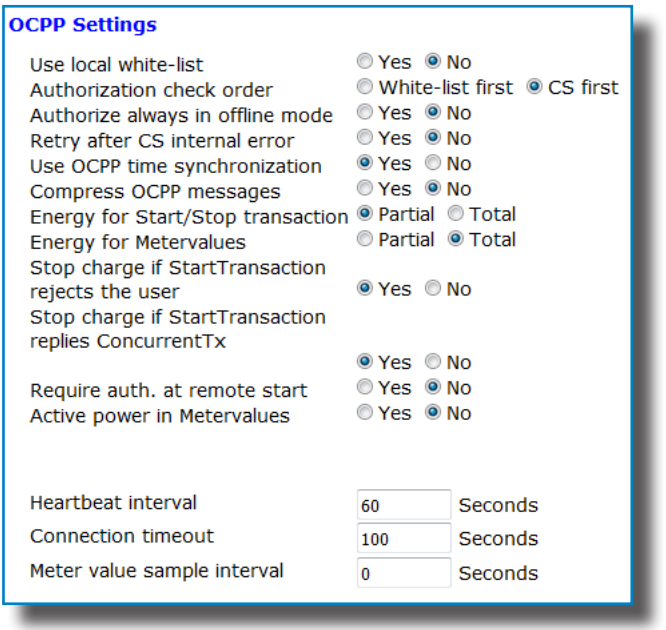
Please contact to the Central System to get the configuration parameters.



Value	Description
Charge Box Id.	Charge point identifier
Protocol Require CS client certificate	If HTTPS is selected, make sure to have CS Server CA certificate *Provided by the Central System
OCPP Listening port	Incoming listening port for remote request
User (for the CB server)	Authentication for central system *Leave in blank if not needed
Public IP timeout	Maximum waiting time to obtain the public IP address of the 3G modem

OCPP Settings

Select proper values according to OCPP Central System parameters.



Value	Description
Use local white-list	• **Yes**: local list of authorized users enabled • **No**: local list of authorized users disabled
Authorization check order	• **White-list first**: ID authorization has first place on the local white-list. If the user does not exist locally, then in second place backend is asked to obtain the authorization. • **CS first**: ID authorization is always asked to the backend.

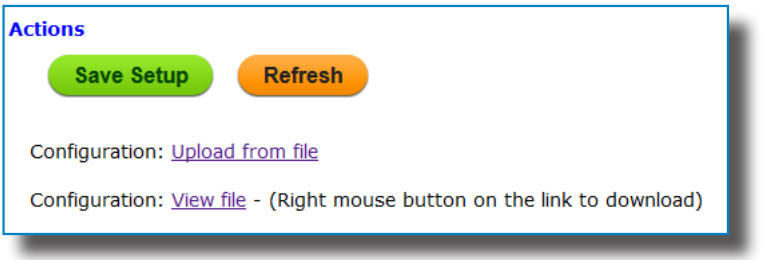
Value	Description
Authorize always in offline mode	• **Yes**: If user is not present locally in the local white-list and charge point cannot ask to the backend, user is allowed to start a new charge transaction. • **No**: If user is not present locally in the local white-list and charge point cannot ask to the backend, the user is not allowed to start a new charge transaction.
Retry after CS internal error	• **Yes**: Enabled. If StatusNotification, StartNotification or StopNotification are not delivered correctly to the backend, Charge Point tries again to send those requests until it is successful. • **No**: Disabled. **NOTE**: Special development must be done in backend in order to retry the messages by charge point
Use OCPP time synchronization	• **Yes**: Synchronization of date and time enabled • **No**: Synchronization of date and time disabled
Compress OCPP messages	• **Yes**: Enabled • **No**: Disabled

Value	Description
Energy for Start/Stop transaction	• **Partial:** Consumed value of energy by the vehicle sent between start and stop • **Total:** Existing value of the total accumulated energy of the meter, is sent between start and stop
Energy for MeterValues	• **Partial**: Sends partial energy consumption while vehicle is charging • **Total**: Sends the existing value of the total accumulated energy of the meter
Stop charge if StartTransaction rejects the user	• **Yes**: Stop existing charge transaction after response from backend (StartTransaction.conf) when user is Blocked, Expired or Invalid. • **No**: Charge transaction does not stop even if backend rejects the user. (StartTransaction.conf) ***Set this option according to your backend system.
Stop charge if StartTransaction replies ConcurrentTx	• **Yes**: Stop existing charge transaction after response from backend (StartTransaction.conf) when user has already involved in another transaction. • **No**: Charge transaction does not stop even if backend rejects the user. (StartTransaction.conf) ***Set this option according to your backend system.

Value	Description
Require auth. At remote Start	• **Yes**: Charge Point sends an authorization request before starting a new remote charge transaction request. • **No**: Charge Point starts a new remote charge transaction without authorization request.
Active Power in MeterValues	• **Yes**: Send power (Power.Active.Import) and energy (Energy.Active.Import. Register) consumed by the vehicle within meter values requests. • **No**: Only energy consumed is sent within meter values request.
Heartbeat interval	Interval between Heartbeats (in seconds) for the Central System
Connection timeout	Timeout (in seconds) before connecting to the Central System
Meter value sample interval	Interval between Meter values (in seconds) during charge transaction. **NOTE**: Meter values are disabled if 0 seconds is set.

D Finalizing

Final actions to complete the OCCP configuration.



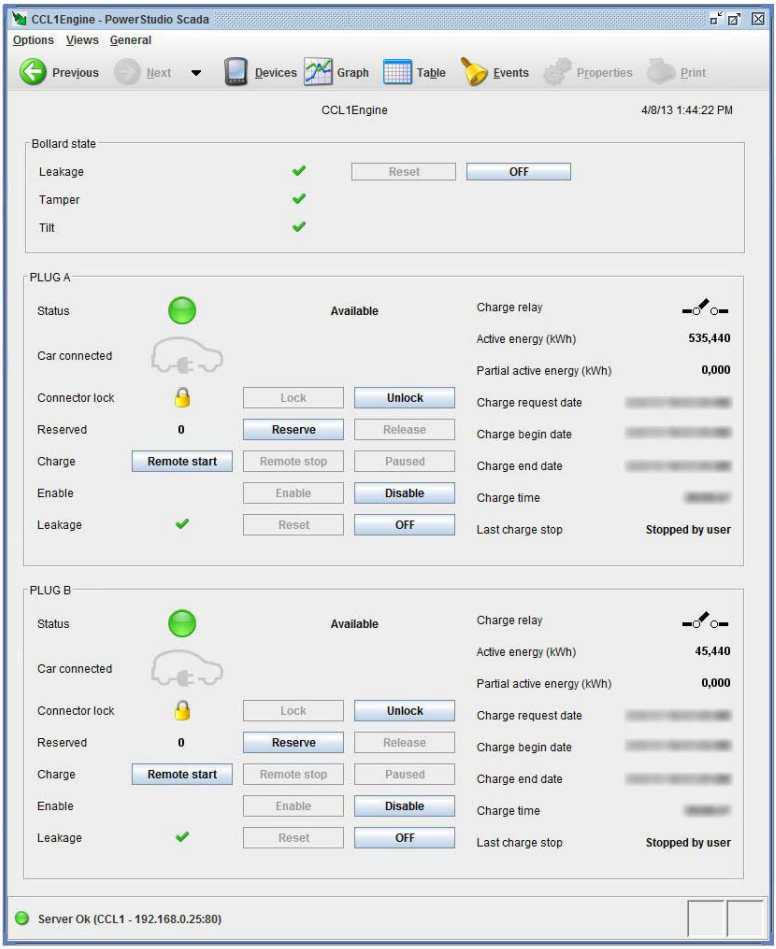
Value	Description
Save Setup	Save settings and apply changes.
Refresh	Restore data entered.
Configuration: Upload from file	Export configuration into a single file
Configuration: View file	Import configuration from a file

8

Monitoring

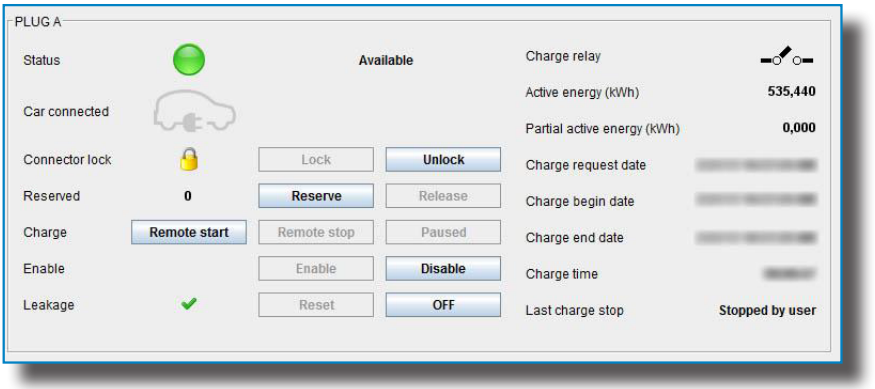
A Client

Charge Point status can be monitored using a software provided by Circontrol:



B Plug section

This section describes the plug status and other useful information.



	Description			
Status	Plug status			
	Plug available	*Starting recharge*	*Plug in use*	*Fault*
Car connected	Vehicle connection status			
	Car connected		Car not connected	
Connector lock	Connector lock status			
	Locked plug		Unlocked plug	

	Description	
Reserved	Reservation status	
	0 = No reservation	Status: *Reserved*
Charge	Remote start	Starts a charge from remotely point.
	Remote stop	Stop charging in progress
	Paused	Pauses charging in progress.
Enable	Enable or disable the plug.	
Leakage	RCD plug status.	
	✔ Normal operation	✘ Channel 1 or 2 tripped
Charge relay	Indicates contactor status	
	 Energy is being supplied to the vehicle.	 No energy is being supplied to the vehicle.
Active Energy (kWh)	Total charge measured energy	
Partial active energy (kWh)	Partial energy meter of the last charge	
Charge request date	Date of the last charge request	
Charge begin date	Starting date of the last charge	
Charge end date	End date of the last charge	
Charge time	Duration of the last charge	
Last charge stop	Reason for the last charge stop.	

9

GENERAL DATA	
Display	LCD Multi-language
Light beacon	RGB Colour indicator
RFID reader	ISO / IEC 14443A/B MIFARE Classic/Desfire EV1 ISO 18092 / ECMA-340 NFC 13.56MHz
Low temperature kit*	-30°C to 45°C

MECHANICAL DATA	
Enclosure rating	IP54 / IK10
Enclosure material	Aluminium & ABS
Enclosure door	Frontal key locked door
Net weight	55Kg
Dimensions (W x H x D)	450 x 1550 x 290 mm

ENVIRONMENTAL CONDITIONS	
Operating temperature	-5°C to +45°C
Storage temperature	-20°C to +60°C
Operating humidity	5% to 95% Non-condensing

CONNECTIVITY	
Ethernet	10/100BaseTX (TCP-IP)
Cellular*	Modem 3G / GPRS / GSM
Interface protocol	OCPP

Technical Data

ELECTRICAL DATA	
Power supply	1P+N+PE / 3P+N+PE
Input voltage	230VAC+/-10% / 400VAC+/-10%
Frequency	50Hz / 60Hz
Overcurrent protection	MCB (curve C)
Safety protection	RCD Type A (30mA) / Type B*
Surge protection*	Transient surge protector IEC 61643-1 (Class II)

MODEL**	CONNECTORS	OUTPUT CURRENT	OUTPUT POWER
S	Type 2 Socket Type 2 Socket	32A 32A	7,4kW 7,4kW
T	Type 2 Socket Type 2 Socket	32A 32A	22kW 22kW
S-one	Type 2 Socket	32A	7,4kW
T-one	Type 2 Socket	32A	22kW
SM	Type 2 Socket CEE 7/3	32A 16A	7,4kW 3,6kW
TM	Type 2 Socket CEE 7/3	32A 16A	22kW 3,6kW
SM4	Type 2 Socket / CEE 7/3 Type 2 Socket / CEE 7/3	32A / 16A 32A / 16A	7,4kW / 3,6kW 7,4kW / 3,6kW
TM4	Type 2 Socket / CEE 7/3 Type 2 Socket / CEE 7/3	32A / 16A 32A / 16A	22kW / 3,6kW 22kW / 3,6kW

(*) Depending on the model, some components may vary

(**) For availability of models, please consult your local supplier

10

Need help?

In case of any query or need further information, please contact our **Post-Sales Department**

ps-support@circontrol.com

circontrol.com

(+34) 937 362 940

(+34) 937 362 941

CIRCONTROL
Mobility & eMobility

CIRCONTROL eVOLVE SMART SERIES INSTRUCTION MANUAL

A comprehensive guide on how to use and configure your eVolve Post.

V1.0, June edition 2017